Claims

1. Method for conducting crash tests using a carriage, in particular for simulating the collision of a motor vehicle with an obstacle, in which the deceleration forces of a real collision are simulated by a crash-test carriage (9) being accelerated in accordance with the real deceleration curve, characterized in that during the test, a force is exerted on the crash-test carriage (9) in the direction of acceleration (II), which is larger than the respective force required for acceleration in accordance with the real deceleration curve, on the one hand, and in that in order to achieve the desired acceleration curve, a braking force opposite to the acceleration direction (II) is exerted on the crash-test carriage (9) or on an apparatus (7) driving it, which is so large that the resulting force accelerates the carriage (9) in accordance with the desired acceleration curve, on the other hand.

2. Method in accordance with claim 1, characterized in that the braking force is regulated in dependence on the actual acceleration.

3. Method in accordance with claim 1 or claim 2, characterized in that the force acting in the direction of acceleration (II) is generated pneumatically.

4. Method in accordance with claim 3, characterized in that, at a maximum braking force, a pressure is generated in a pressure chamber (2) which corresponds at least to the maximum required acceleration force; and in that subsequently the braking force is gradually reduced in accordance with the acceleration curve.

5. Method in accordance with claim 4, characterized in that the generation of the required pressure is controlled via a pressure sensor (4) connected to the pressure chamber (2), in particular by using a computer.

6. Method in accordance with claim 4 or claim 5, characterized in that the pressure in the pressure chamber (2) is lowered to ambient pressure at the end of the crash test.

7. Method in accordance with any one of the preceding claims, characterized in that the braking force is hydraulically transmitted to the brake carriage (9) or to an apparatus (7) driving it.

8. Method in accordance with any one of the preceding claims, characterized in that, at the end of the crash test, an emergency braking of an apparatus (7) driving the crash-test carriage (9) and engaging loosely at this is carried out.

9. Method in accordance with claim 8, characterized in that the end is determined via the path the crash-test carriage (9) covers, by the time and/or by the speed of the crash-test carriage (9).

10. Apparatus for conducting the method in accordance with claim 1 comprising a pressure chamber (2), whose volume (V) is restricted by a piston (8) which acts on the crash-test carriage (9) via a thrust rod (7), a compressor (1) for generating the required pressure in the pressure chamber (2) and a brake device (13) acting on the crash-test carriage (9) or on the thrust rod (7).

11. Apparatus in accordance with claim 10, characterized in that the pressure chamber (2) has a safety valve (3) for restricting the maximum pressure.

12. Apparatus in accordance with claim 10 or claim 11, characterized in that a pressure sensor (4) is connected to the pressure chamber (2) whose output signal is transmitted to a control device to control the pressure generation.

13. Apparatus in accordance with any one of claims 10 to 12, characterized in that a pressure switch (5) is connected to the pressure chamber (2) whose response pressure lies somewhat below the response pressure of the safety valve (3) and by which the compressor (1) is switched off.

14. Apparatus in accordance with any one of claims 10 to 13, characterized in that the brake device (13) acting on the crash-test carriage (9) or on the thrust rod (7) can be hydraulically actuated.

15. Apparatus in accordance with claim 14, characterized in that the braking force can be regulated via a hydraulic valve (14).

16. Apparatus in accordance with claim 15, characterized in that the braking force can be regulated in dependence on the acceleration of the crash-test carriage (9).

17. Apparatus in accordance with claim 14 or claim 15, characterized in that the braking force can be regulated in dependence on the desired pressure of the brake device (13).

18. Apparatus in accordance with claim 17, characterized in that the crash-test carriage (9) can be displaced by means of a thrust rod (7) engaging loosely at the crash-test carriage (9).

19. Apparatus in accordance with claim 18, characterized in that the brake device (13) acts on the thrust rod (7).

20. Apparatus in accordance with any one of claims 10 to 19, characterized in that a plurality of units (1, 2) for generating the acceleration force are provided.

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